

O3b Networks
Application for Experimental License
Testing with O3b from Manassas, VA

Narrative Statement

(1) Name, address, phone number (also e-mail address and facsimile number, if available) of the applicant.

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(2) Description of why an STA is needed.

O3b Limited (“O3b”) is a satellite operator with a unique non-geostationary orbit (“NGSO”) satellite system¹ that operates in a medium earth orbit 8,062 km above the earth. O3b is a wholly-owned subsidiary of SES S.A. (“SES”). SES operates a fleet of over 50 geostationary orbit (“GSO”) commercial satellites.

O3b Limited (O3b) is seeking an experimental special temporary authority to test and demonstrate the capabilities of a new class of satellite antenna, the GetSat Microsat terminal, which will eventually support communications on mobile platforms, including aeronautical services. The GetSat Microsat terminal has the potential to deliver high-throughput, low-latency satellite capacity to mobile platforms and is being developed to help enable critical applications for the U.S. Government.

O3b is requesting special temporary authority to conduct **on-the-ground** tests of the GetSat Microsat for fixed and short range mobile operations at its testing facility in Manassas, VA. The new terminal will communicate with O3b’s Ka-band NGSO satellite constellation.

(3) O3b seeks temporary experimental authority to test how these new satellite antenna work

O3b will operate the terminals at O3b’s testing facility in Manassas, VA in both fixed and mobile mode. All mobile operations will be conducted within a 1-mile radius of the designated coordinates (38.7834° N, 77.5719° W). O3b seeks to operate two GetSat terminals at the facility in Manassas, Virginia and those terminals will communicate with O3b’s NGSO system.

(4) Time and dates of proposed operation

O3b requests temporary authority for 4 months, from June 25, 2018 through October 25, 2018. O3b will notify any U.S. authorized co-channel Ka-band satellite operators at least one week prior to any transmit testing, and provide emergency contact information. In addition, when the earth station will transmit in

¹ The FCC has granted market access to the current O3b 16 satellite constellation and authorized the expansion of the constellation to up to 42 satellites. See O3b Limited, Call Sign S2935, File No. SAT-AMD-20171109-00154 (granted June 4, 2018).

spectrum bands shared with terrestrial operators, O3b will complete frequency coordination prior to testing. In the event that there is harmful interference, O3b will immediately cease transmissions.

(5) Class(es) of station (fixed, mobile, fixed and mobile) and call sign of station (if applicable).

The transmitting stations will operate in fixed and mobile

(6) Description of the location(s) and, if applicable, geographical coordinates of the proposed operation.

O3b will operate the terminals at O3b's testing facility in Manassas, VA, within a 1-mile radius of the designated coordinates on the application listed below:

Latitude: 38° 47' 0.24" N

Longitude: 77° 34' 18.84" W

(7) Transmit equipment to be used, including name of manufacturer, model and number of units.

GetSat/Microsat ES Antenna 0.2m: 2 units

(8) Frequencies desired.

Transmit:

27.5 – 30.0 GHz

Receive:

17.8 – 18.6 GHz

18.8 – 20.2 GHz

(9) Maximum effective radiated power (ERP) or equivalent isotropically radiated power (EIRP).

The maximum transmitted ERP will be 45.6 dBW.

(10) Emission Designator see §2.201 of this chapter) or describe emission (bandwidth, modulation, etc.)

50M0G7D

6M00G7D

(11) Overall height of antenna of antenna structure above the ground (if greater than 6 meters above the ground or an existing structure, see part 17 of this Chapter concerning notification to the FAA).

The overall height of the antenna above ground level is 1 meter.

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- I. Is a directional antenna (other than radar) used? Yes
 - a. If yes, provide the following information
 - i. Width of the beam in degrees at the half power point: Az=1.3 degrees and El=2.2 degrees
 - ii. Orientation in horizontal plane (degrees): Azimuth from 130° to 230°
 - iii. Orientation in vertical plane (degrees): Elevation from 14° to 33° across the pass